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WATER SUPPLY OUTLOOK FOR WASHINGTON



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF
FEB. 1, 1978

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SOME OF THE DATA IN THIS REPORT HAVE BEEN RECEIVED THROUGH THE SOIL CONSERVATION SERVICE'S NEW SNOTEL SYSTEM WHICH TRANSMITS INFORMATION VIA THE SPACE AGED METEOR BURST METHOD FROM DATA SITES TO MASTER STATIONS LIKE THESE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R.M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

GALEN S. BRIDGE

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

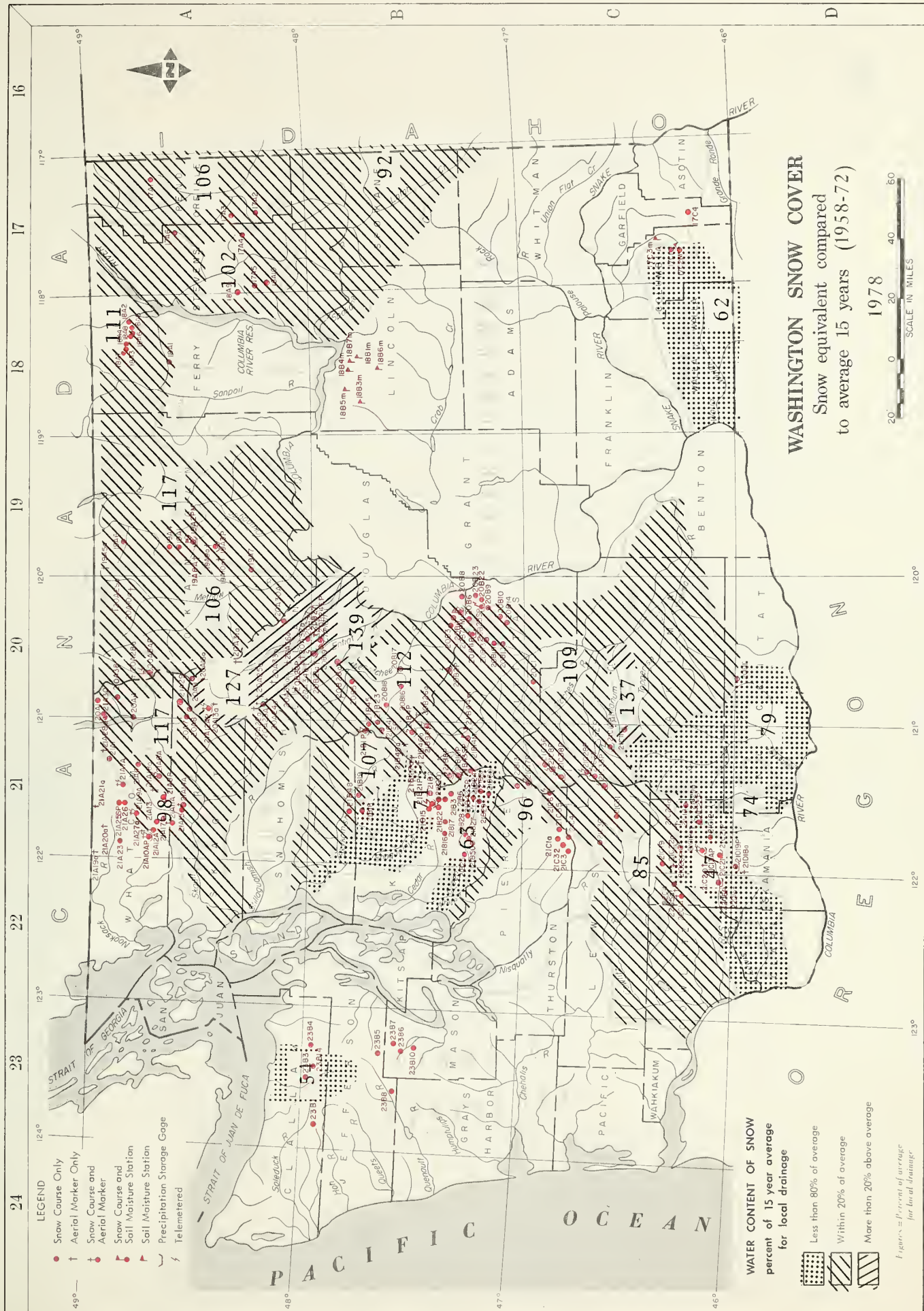
Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor
and
NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Cheveliah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A84	2	36N	23E	7000
Muckamuck	19A94	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysavten	20A284	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A104	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
8illy Goat Pass	20A104	10	38N	20E	6400
Dollar Watch	20A294	8	39N	20E	7000
Harts Pass	20A54P	7	37N	18E	6500
Horseshoe Basin	19A54	15	40N	23E	7000
Loup Loop	19A7	36	34N	23E	4650
Chelon Lake Basin					
Cloudy Pass	20A224	12	31N	15E	6500
Greenwood Flat	20A254	3	31N	16E	3540
Little Meadows	20A244	8	31N	16E	5275
Lynan Lake	20A234	18	31N	16E	5900
Park Creek Flat	20A134	19	34N	16E	2220
Park Creek Ridge	20A124	18	34N	16E	4600
Petersons	20A164	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A304	32	31N	20E	6300
War Creek Pass	20A314	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B284	19	28N	18E	5425
Brief	20B19	34	28N	17E	1600
Entiat Meadows	20A334	28	31N	17E	4340
Entiat River Trail	20A344	2	29N	17E	3325
Four Mile Ridge	20B274	15	28N	19E	6800
Fox Camp	20A364	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3510
Pope Ridge Snow Pillow	20B21SP	22	29N	18E	3540
Pugh Ridge	20A324	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A354	21	30N	17E	3910
Tommy Creek	20B214	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B14SP	13	26N	14E	3240
Blewett Pass No. 2	20B2P	43	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A284	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows New	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hazen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30	10	35N	14E	4200
Baker River					
Baker Pass	21A274	1	37N	7E	4900
Dock Butte	21A114	8	36N	8E	3800
Easy Pass	21A74	19	39N	11E	5200
Jasper Pass	21A64	17	38N	11E	5400
Kono Kulshan	21A17	31	37N	9E	800
Marten Lake	21A94	23	38N	8E	3600
Mount Blum	21A184	27	38N	10E	5800
Rocky Creek	21A124P	20	37N	8E	2100
Schreibers Meadow	21A104P	18	37N	8E	3400
S. F. Thunder Creek	21A144	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A194	7	40N	7E	4400
Canyon	21A204	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A214	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900
Soleeduck River					
Oer Lake	23B1	14	28N	9W	3900
LEGEND					
NUMBERING SYSTEM EXAMPLE					
SNOW COURSE ONLY					
21A7 AERIAL MARKER ONLY					
21A7A AERIAL MARKER ONLY					
21A7M SNOW COURSE AND AERIAL MARKER					
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NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	1762	7	31N	43E	5250
Bunchgrass Meadow	1761	24	37N	44E	5000
Winchester Creek	1763	30	33N	43E	2970
Kettle River					
Boulder Road	1842	36	39N	36E	1450
Butte Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Gait Creek	1844	26	39N	35E	3595
Snow Caps Creek	1845	3	38N	36E	2150
Snow Caps Trail	1846	5	38N	36E	2720
Summit G. S.	1847	20	39N	35E	4600
Colville River					
Baird	1746	19	36N	42E	3215
Carlson	1849	34	32N	38E	2885
Chewelah	1744	11	32N	41E	4925
Stranger Mountain	1745	26	31N	38E	4990
Togo	1840	6	29N	38E	5370
Sanpoil River					
Sherman Creek Pass	1841	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loop	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12a	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
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Blewett Pass No. 2	20B2P	35	22N	17E	4270
Chilwauk G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	38N	40E	5700
M111 Creek					
Couse	17C5M	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmets SM)	17C2M	23	9N	40E	4400
Klickitat River					
Status Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	BE	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	9N	7E	2200
Calamity Ridge	2201a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
UPPER COLUMBIA DRAINAGE					
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Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12a	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3540
Blewett Pass No. 2	20B2P	35	22N	17E	4270
Chilwauk G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	1762	7	31N	43E	5250
Bunchgrass Meadow	1761	24	37N	44E	5000
Winchester Creek	1763	30	33N	43E	2970
Kettle River					
Boulder Road	1842	36	39N	36E	1450
Butte Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Gait Creek	1844	26	39N	35E	3595
Snow Caps Creek	1845	3	38N	36E	2150
Snow Caps Trail	1846	5	38N	36E	2720
Summit G. S.	1847	20	39N	35E	4600
Colville River					
Baird	1746	19	36N	42E	3215
Carlson	1849	34	32N	38E	2885
Chewelah	1744	11	32N	41E	4925
Stranger Mountain	1745	26	31N	38E	4990
Togo	1840	6	29N	38E	5370
Sanpoil River					
Sherman Creek Pass	1841	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loop	19A7	36	34N	23E	4650
Chelon Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12a	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3540
Blewett Pass No. 2	20B2P	35	22N	17E	4270
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UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	1762	7	31N	43E	5250
Bunchgrass Meadow	1761	24	37N	44E	5000
Winchester Creek	1763	30	33N	43E	2970
Kettle River					
Boulder Road	1842	36	39N	36E	1450
Butte Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Gait Creek	1844	26	39N	35E	3595
Snow Caps Creek	1845				

WATER SUPPLY OUTLOOK

State of Washington

February 1, 1978

* A dramatic turn around has occurred from the drought con-
* ditions of last year. Although not all watersheds have
* adequate snow cover, forecasted water supplies are all for
* within near normal amounts. Heavy rains in December depleted
* much of the snow that occurred prior to that date and this
* snow pack never fully recovered. Well above normal snow
* packs have occurred only at a few isolated low elevation
* type watersheds on the east side of the Cascades. While the
* remaining east side watersheds have normal or above snow
* packs, the west and southwest watersheds all have below
* normal snow packs as of February 1. The poorest snow covers
* are in the Lewis River Drainage and the Elwha Drainage on
* the Olympic Peninsula.

SNOW COVER

The well above normal snow cover that was generally experienced last month has not continued. This has been a result of lack of input in the high mountain watersheds. Precipitation has generally been occurring in the form of rain and this has not changed, as it normally does with elevation, to snow in the higher watersheds. East of the Cascades, only the Spokane River Drainage has below normal snow packs while the other drainages all have normal to above normal conditions as of February 1. In the Lower Columbia Drainages, the watersheds have well below normal snow cover as of this time. On the west side, drainages are more nearly normal with only the Skagit and Skykomish indicating above normal snow covers and, as previously stated, on the Olympic Peninsula, the Elwha Drainage is 46 percent below normal. Comparisons with last year are made in the tabulation following the forecasts. These comparisons are ridiculously high but, again, the snow pack last year was ridiculously low.

RESERVOIRS

The amount of water stored in both irrigation and power reservoirs varies considerably from excellent to poor. The five irrigation reservoirs in the Yakima Drainage have excellent amounts of water in storage and with anticipated runoff and controls should cause no problem with the water users below. The two small reservoirs in the Okanogan Drainage in Washington are not as fortunate. Continued above normal precipitation and favorable melt conditions will have to occur for these reservoirs to comfortably fill this spring. Power reservoirs are also variable, with only Ross Reservoir in the Skagit Drainage indicating above normal amounts of water in storage. Forecasted flows to these reservoirs indicate there should be no problem in filling during the spring runoff period.

PRECIPITATION

As reported by the National Weather Service, rainfall was below normal in all drainage divisions, with the exception of the central Washington area, during the month of January. This poor rainfall was not sufficient to overcome the above normal conditions that have occurred from November to this date. Only the Columbia above Castlegar has a November through January winter precipitation that still is below normal. During the fall period, precipitation was highly variable by watersheds. September rainfall was well above normal - October well below, for a September-October period that was near normal in most cases.

STREAMFLOW

During January, all streamflow was reported to be subnormal with the exception of one low elevation stream in the Lower Columbia Drainage. The lack of precipitation previously mentioned is the main reason for this low streamflow and localized storms increased the flow of the Klickitat River at Pitt to its above normal stage. The main stem of the Columbia had a flow that ranged from 86 percent of normal at Birchbank to 93 percent of normal at The Dalles. Flow of the Yakima River, as measured at Kiona, was 94 percent of normal. The lowest flow occurred in the Green River, as measured below Howard Hanson Dam. During January the flow of this stream was only 39 percent of normal. Forecasts of snow melt streamflow are for generally near normal amounts and range from 82 percent of normal for the Dungeness River near Sequim to a high of 19 percent above normal for the Entiat River near Ardenvoir. Numerical forecasts can be found on the following pages.

STREAMFLOW FORECASTS - FEBRUARY, 1978

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1977 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1978	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1977	1976	1975	15-Yr. Average 58-72
<u>COLUMBIA BASIN</u>							
<u>COLUMBIA RIVER SYSTEM</u> **							
Columbia River	42900	92	Apr-Sept	31583	53937	41101	46410
at Birchbank <u>1/</u>	34700	92	Apr-July	23839	38979	32944	37548
	25350	92	Apr-June	18040	26054	22429	27549
Columbia River	67200	97	Apr-Sept	41805	80974	66501	69020
at Grand Coulee <u>1/</u>	56900	97	Apr-July	32813	62715	55870	58368
	44700	97	Apr-June	26413	46556	41377	46049
Columbia River	74900	99	Apr-Sept	43659	86849	73553	75290
bl. Rock Island Dam <u>1/</u>	63800	99	Apr-July	34392	67890	62727	64181
	50100	99	Apr-June	27740	50520	46759	50594
Columbia River	108000	103	Apr-Sept	54130	122876	108901	104600
at The Dalles, Or <u>1/</u>	93000	104	Apr-July	42939	99965	94195	89875
	76100	104	Apr-June	35577	79164	73012	73143
<u>PEND OREILLE RIVER SYSTEM</u> **							
Pend Oreille River	16900	106	Apr-Sept	6041	17638	16946	15950
bl. Box Canyon	15600	106	Apr-July	5312	15979	15271	14677
	13500	106	Apr-June	4816	13687	11814	12767
<u>KETTLE RIVER SYSTEM</u>							
Kettle River	1960	104	Apr-Sept	1154	2434	1860	1873
nr. Laurier	1840	102	Apr-July	1114	2112	1779	1794
	1675	102	Apr-June	1045	1826	1592	1640
Colville River	165	111	Apr-Sept		123	225	148
at Kettle Falls	155	113	Apr-July		106	203	137
	145	113	Apr-June		98	187	128

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR

Basin, Stream and Station	Forecast Runoff 1978	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1977	1976	1975	15-Yr Average 58-72
<u>SPOKANE RIVER SYSTEM***</u>							
Spokane River	2850	95	Apr-Sept	1066	3215	3418	2982
at Post Falls, ID <u>2/</u>	2760	95	Apr-July	1014	3069	3275	2899
	2620	95	Apr-June	960	2884	3033	2773
<u>OKANOGAN RIVER SYSTEM **</u>							
Similkameen River	1770	117	Apr-Sept	641	1944	1434	1516
nr. Nighthawk	1660	117	Apr-July	598	1720	1339	1424
	1430	117	Apr-June	541	1347	1092	1222
Okanogan River	1950	113	Apr-Sept	705	2185	1582	1723
nr. Tonasket	1790	113	Apr-July	643	1836	1437	1582
	1525	113	Apr-June	582	1382	1181	1349
<u>METHOW RIVER SYSTEM **</u>							
Methow River	1200	116	Apr-Sept		1205	992	1031
nr. Pateros	1120	116	Apr-July		1047	911	963
	965	116	Apr-June		802	728	832
<u>CHELAN RIVER SYSTEM</u>							
Chelan River	1470	117	Apr-Sept	589	1466	1364	1253
at Chelan <u>3/</u>	1320	118	Apr-July	474	1184	1210	1112
	1070	121	Apr-June	397	836	858	881
Stehekin River	1025	113	Apr-Sept		1010	1040	904
at Stehekin	890	115	Apr-July		787	796	776
	695	116	Apr-June		523	526	600
Entiat	285	119	Apr-Sept		310	268	239
nr. Ardenvoir	265	120	Apr-July		266	244	220
	220	122	Apr-June		190	182	180
<u>WENATCHEE RIVER SYSTEM</u>							
Wenatchee River	1455	111	Apr-Sept		1510	1396	1312
at Plain	1325	112	Apr-July		1263	1262	1187
	1130	118	Apr-June		891	924	956
Wenatchee River	2000	112	Apr-Sept	855	2074	1920	1786
at Peshastin	1875	115	Apr-July	744	1746	1738	1629
	1535	116	Apr-June	662	1238	1279	1324
Stemilt Basin	140*	101	May-Sept		144*	134*	138*
nr. Wenatchee							
Icicle Creek	440	119	Apr-Sept				371
nr. Leavenworth	395	116	Apr-July				342
	335	120	Apr-June				279

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR

*** Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

* Thousands of Miners' Inches.

Basin, Stream and Station	Forecast Runoff 1978	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore cast period	1977	1976	1975	15-Yr. Average 58-72
<u>YAKIMA RIVER SYSTEM</u>							
Yakima River	130	92	Apr-Sept	80	157	168	142
nr. Martin <u>4/</u>	118	90	Apr-July	70	141	154	131
	110	95	Apr-June	67	117	127	116
Yakima River	910	94	Apr-Sept		1091	1112	968
at Cle Elum <u>5/</u>	805	92	Apr-July		980	1012	877
	722	95	Apr-June		807	852	764
Yakima River	1780	103	Apr-Sept		1278	2229	1730
nr. Parker <u>6/</u>	1770	104	Apr-July		2006	2141	1701
	1650	104	Apr-June		1702	1859	1580
Kachess River	116	93	Apr-Sept	60	142	154	125
nr. Easton <u>7/</u>	106	90	Apr-July	55	131	145	118
	101	95	Apr-June	54	109	120	106
Cle Elum River	467	98	Apr-Sept	248	561	539	477
nr. Roslyn <u>8/</u>	425	97	Apr-July	211	484	492	437
	375	101	Apr-June	192	370	388	372
Bumping River	147	101	Apr-Sept	65	175	179	146
nr. Nile <u>9/</u>	137	102	Apr-July	60	152	163	134
	110	98	Apr-June	55	109	119	112
American River	132	103	Apr-Sept		132	149	128
nr. Nile	125	106	Apr-July		116	137	118
	105	105	Apr-June		86	104	100
Tieton River	260	105	Apr-Sept	123	302	299	247
at Tieton Dam <u>10/</u>	210	100	Apr-July	94	242	253	211
	175	102	Apr-June	77	179	187	172
Naches River	925	104	Apr-Sept		1046	1054	889
nr. Naches <u>11/</u>	835	103	Apr-July		908	952	810
	695	100	Apr-June		717	761	698
Ahtanum Creek	53	110	Apr-Sept		51	57	48
nr. Tampico <u>12/</u>	48	110	Apr-July		45	51	44
	42	108	Apr-June		37	44	39

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1978	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1977	1976	1975	15-Yr. Average 58-72
<u>LOWER COLUMBIA RIVER SYSTEM</u>							
Mill Creek	25	93	Apr-Sept		41	39	27
nr. Walla Walla	22	92	Apr-July		36	34	24
	19	90	Apr-June		32	30	21
Lewis River	1220	92	Apr-Sept	1040	1285	1188	1319
at Ariel <u>13/</u>	1065	93	Apr-July	831	1130	1022	1151
	950	92	Apr-June	761	990	885	1028
Cowlitz River **	2200	105	Apr-Sept	1587	2296	2127	2101
bl. Mayfield Dam	1950	106	Apr-July		1963	1852	1846
	1650	105	Apr-June		1584	1451	1578
Cowlitz River **	2855	103	Apr-Sept	2172	2924	2646	2773
at Castle Rock <u>14/</u>	2550	106	Apr-July	1778	2493	2278	2416
	2150	103	Apr-June	1603	2063	1816	2083

OLYMPIC PENINSULA

DUNGENESS RIVER SYSTEM

Dungeness River	135	82	Apr-Sept		160	149	165
nr. Sequim	115	84	Apr-July		128	118	137
	85	82	Apr-June		91	82	104

PUGET SOUND

SKAGIT RIVER SYSTEM

Skagit River	2540	105	Mar-Aug		2841	2339	2418
at Newhalem <u>15/</u>							

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.

14/ Observed flow corrected for storage in Mayfield Reservoir.

15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about February 1, 1978 as percent of the same date in 1977 and 1976 and average of record.

Tributary Basin	No. of Courses Average	1978 Snow Water Expressed as percent of		
		1977	1976	1958-72 Avg.

UPPER COLUMBIA BASIN

Pend Oreille	8	441	169	106
Kettle	15	309	124	111
Colville	5	934	195	102
Spokane	4	286	111	92
Okanogan	30	616	119	117
Methow	6	1946	143	106
Chelan	1	488	97	127
Entiat	11	1347	106	139
Wenatchee	9	820	120	112
Yakima	24	1005	130	109
Ahtanum	2	1204	256	137

LOWER COLUMBIA

Mill Creek	3	421	59	62
Klickitat	1	-	383	79
White Salmon	2	668	107	74
Lewis	16	894	72	47
Cowlitz	3	1016	110	85

PUGET SOUND

White	3	878	95	96
Green	8	960	58	63
Snoqualmie	1	2900	72	71
Skykomish	2	942	98	107
Skagit	12	805	88	117
Nooksack	1	640	100	-
Baker	6	472	94	98

OLYMPIC PENINSULA

Morse	1	-	90	-
Elwha	1	-	74	54
Dungeness	1	-	-	-

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (February)			
			1978	1977	1976	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	134.7	21.7	169.1	138.4
Columbia	Franklin D. Roosevelt Lake	5232.0	3149.2	4172.0	5116.0	3766.0
Columbia	Banks Lake	714.9	714.9	704.2	712.2	566.9
Okanogan	Conconully Reservoir	13.0	2.9	8.0	10.0	10.8
Okanogan	Salmon Lake	10.5	6.0	9.6	9.8	7.6
Chelan	Lake Chelan	676.1	274.6	258.2	513.5	295.9
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	139.5	65.6	118.3	96.1
Kachess	Kachess Lake	239.0	188.1	192.4	206.8	175.7
Cle Elum	Lake Cle Elum	436.9	248.7	382.0	308.4	232.9
Bumping	Bumping Lake	33.7	24.5	4.4	11.4	8.3
Tieton	Rimrock Lake	198.0	135.2	128.1	140.0	110.6
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	1001.8	769.7	1258.7	582.1
Skagit	Diablo Reservoir	90.6	85.2	83.5	88.0	84.4
Skagit	Gorge Reservoir	9.8	8.2	8.4	8.3	-

1/ Based on Active Storage

* 15-year Average 1958-72

SOIL MOISTURE - FEBRUARY

Drainage Basin and Station			Profile	Inches Total	Soil Moisture Content		
	Number	Elev.	Depth	Capacity	Inches as of Feb. 1		
					1978	1977	1976
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	-	Frozen	3.6
Trout Creek	3-M	3600	48	7.3	3.5	3.3	4.8
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	8.0	-	-
Helmets	17C2M	4400	48	12.0	9.8	-	-
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	9.9	6.8	11.6

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1		
					1977	1976	1975
<u>OKANOGAN</u>							
Salmon Meadows	19A02M	4500	48	5.4	-	3.4	3.2
Trout Creek	3-M	3600	48	7.3	3.2	3.4	3.1
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	-	-	7.3
Helmets	17C2M	4400	48	12.0	-	-	6.5
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	6.6	-	8.6

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL		WINTER	
	Sept-Oct Observed	1977 <u>2/</u> Departure	Nov-Dec 1977 Observed	Jan 1978 <u>2/</u> Departure
Columbia in Canada	3.41	-1.61	10.09	-1.04
Pend Oreille - Spokane	4.10	+0.06	13.46	+1.28
Northeastern Washington	2.06	-0.41	7.70	+0.99
Southeastern Washington	2.51	0.0	8.36	+1.30
Central Washington	1.08	+0.11	5.41	+1.66
North Central Washington	1.39	-0.21	5.98	+1.14
Northwest Slope Cascades	11.16	-2.05	42.06	+4.13
Southwest Slope Cascades	9.42	+0.74	32.36	+3.45
Northeastern Washington		- Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.		
Southeastern Washington		- Touchet, Tucannon and Palouse Drainages.		
Central Washington		- Yakima, Wenatchee and Chelan Drainages.		
North Central Washington		- Methow and Okanogan Drainages.		
Northwest Slope Cascades		- Puget Sound Drainages.		
Southwest Slope Cascades		- Lower Columbia Drainages.		

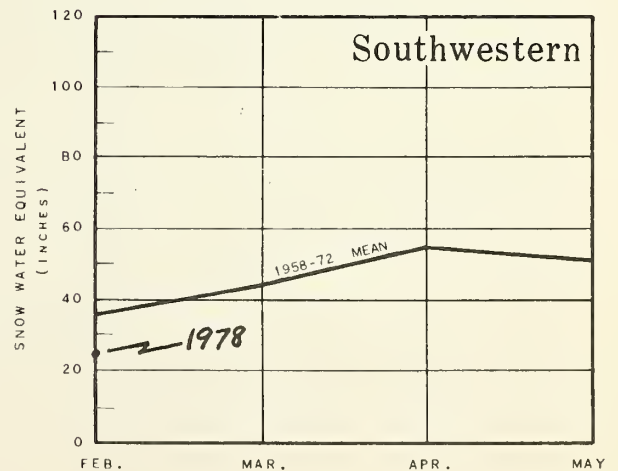
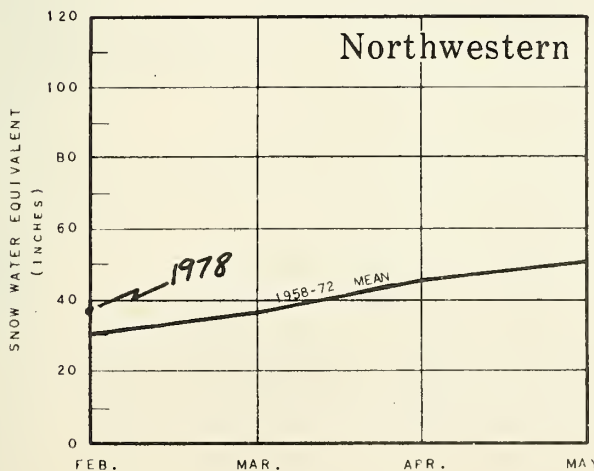
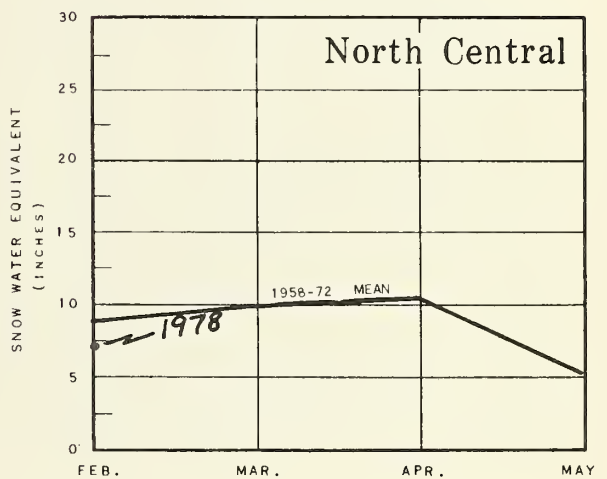
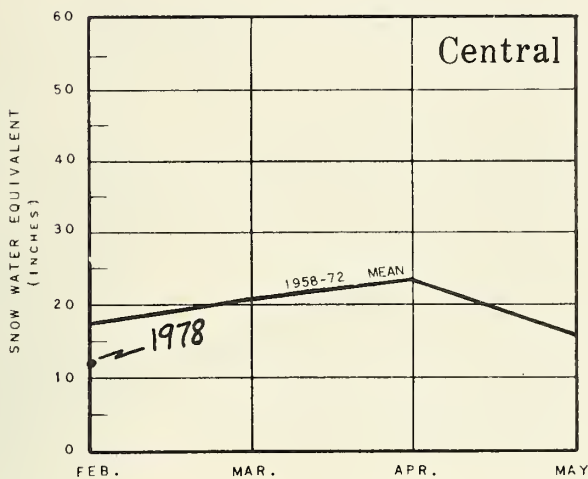
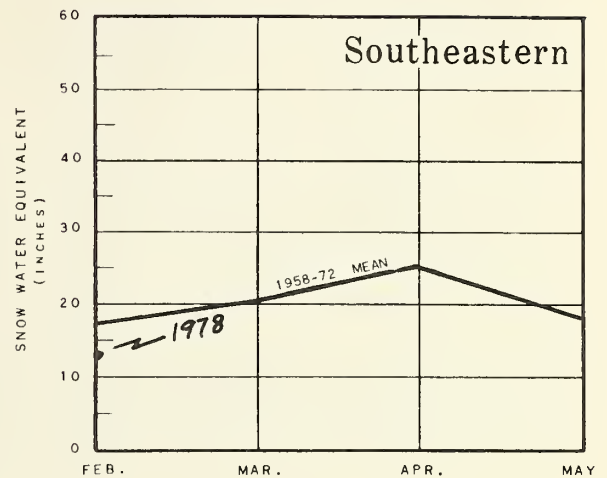
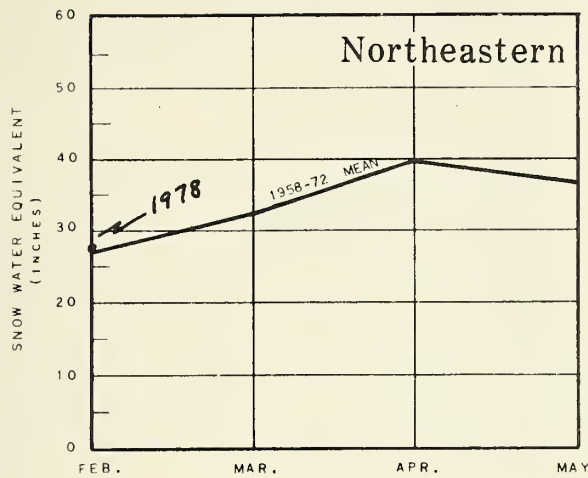
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1978

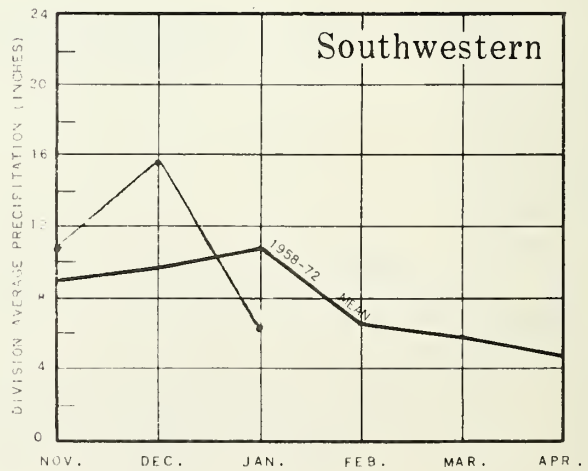
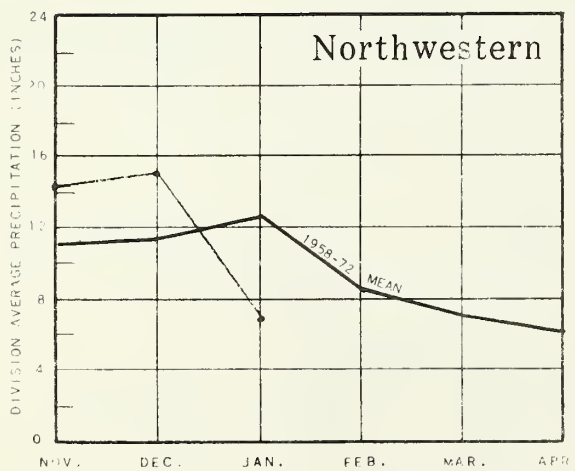
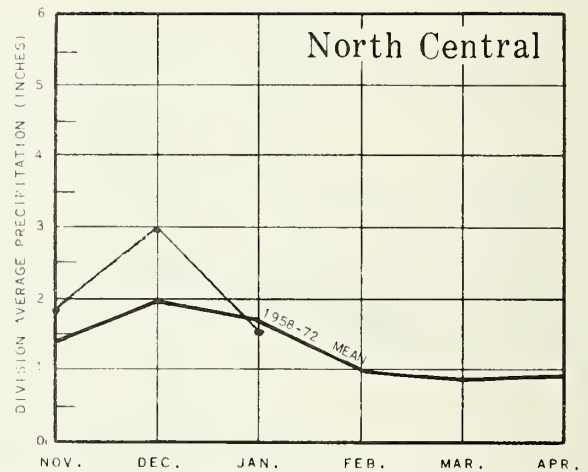
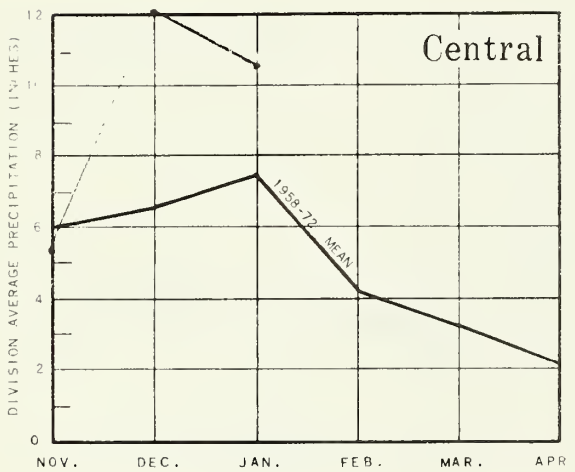
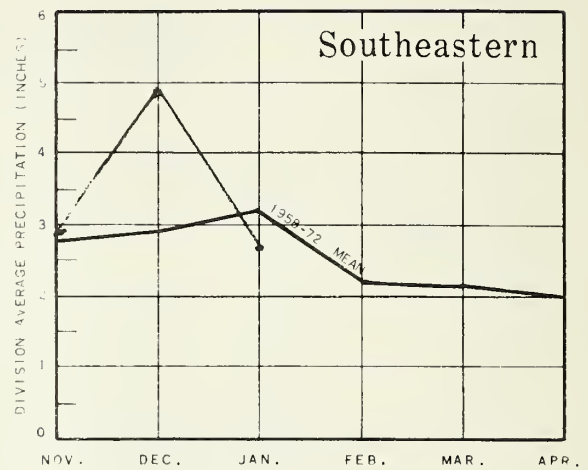
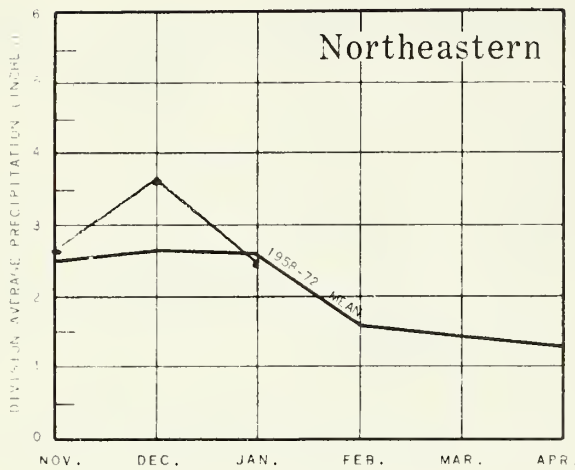
DRAINAGE AREAS



WASHINGTON VALLEY PRECIPITATION

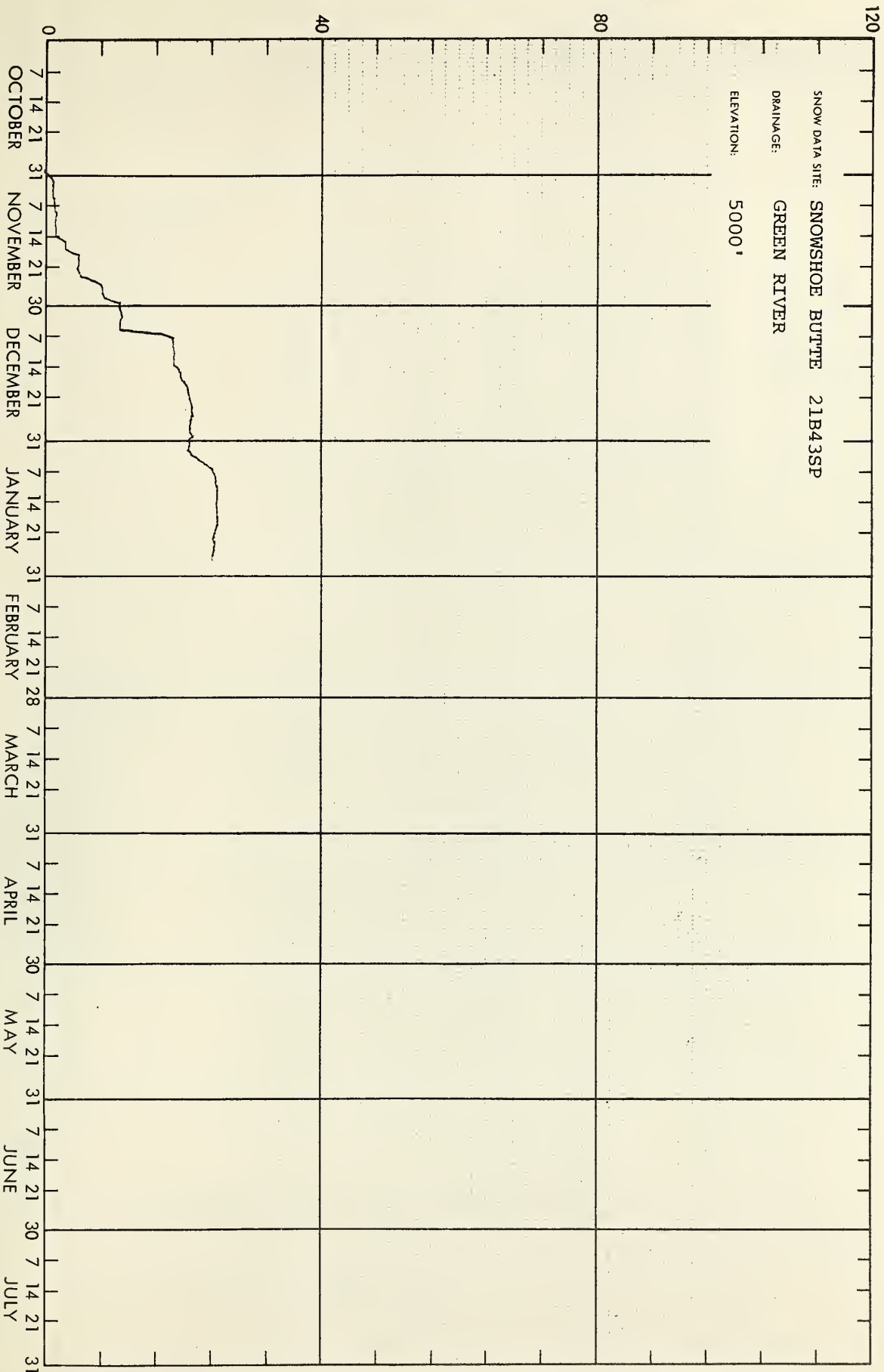
1977 - 1978

DRAINAGE AREAS



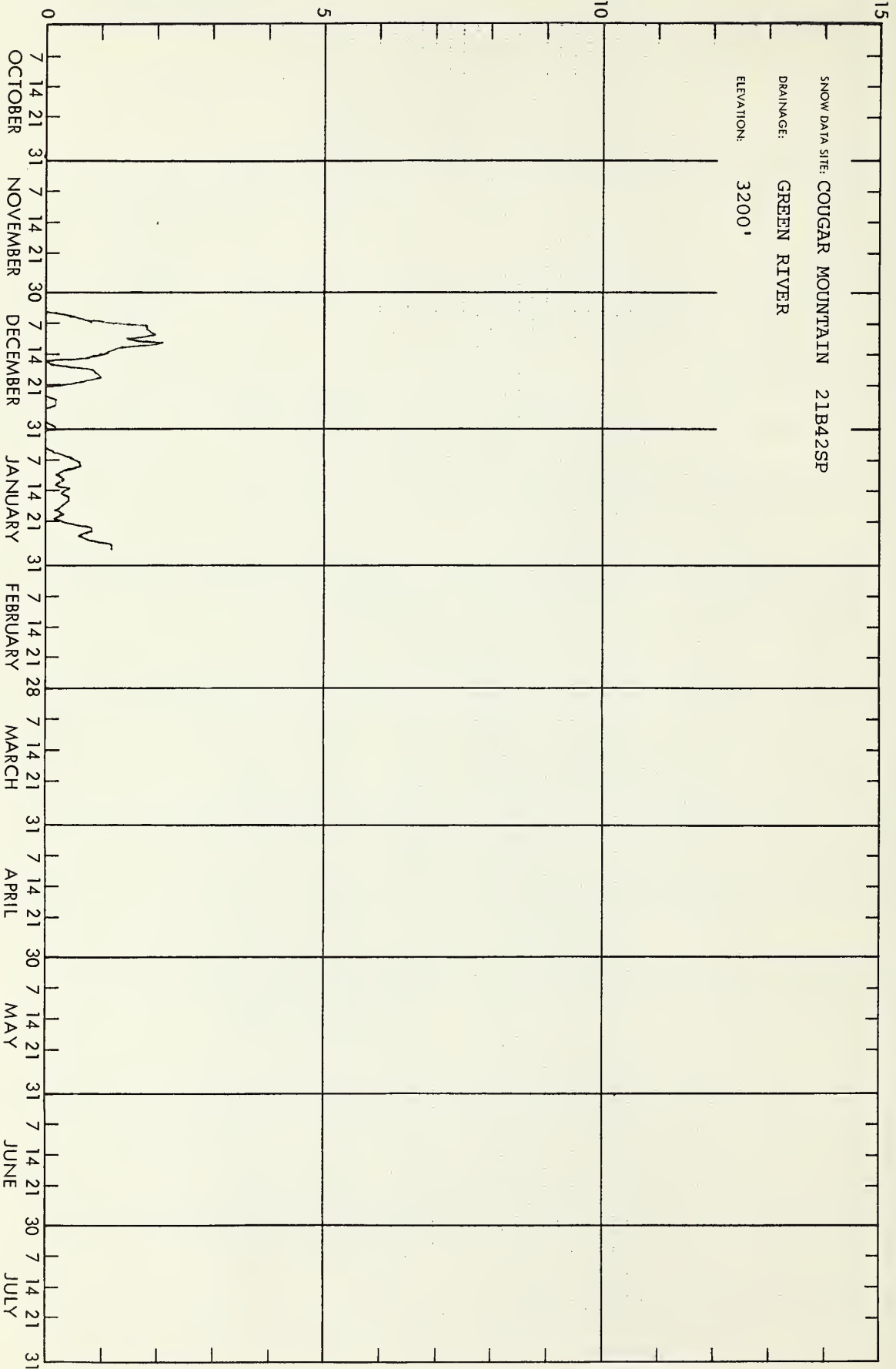
Preliminary Analysis by National Weather Service

INCHES OF WATER IN SNOWPACK



+

INCHES OF WATER IN SNOWPACK



SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

U P P E R C O L U M B I A D R A I N A G EPEND OREILLE RIVER

Benton Meadow	16A02	2344	1/3	23	5.4	1.5	3.5
			1/30	24	6.3	1.7	6.0
Benton Spring	16A03	4900	1/3	40	12.1	2.4	8.4
			1/30	50	15.8	3.2	13.8
Chewelah	17A04	4925	1/28	45	13.2	2.0	13.0
Lookout	15B02	5250	12/28	62	22.0	4.8	15.6
			1/30	84	27.5	7.0	26.7
Nelson	19-Can	3050	12/30	35	8.6	2.6	7.5*
			1/31	46	11.7	3.1	11.2*
Schweitzer Bowl	16A06	4500	12/29	57	18.7	5.0	-
			2/1	78	25.5	7.0	22.6
Schweitzer Ridge	16A05	6100	12/29	78	26.2	5.8	-
			2/1	107	39.4	9.8	32.1
Winchester Creek	17A03	2970	1/27	32	8.0	1.7	9.7

KETTLE RIVER

Barnes Creek	90-Can	5300	1/30	48	14.7	10.0	14.0*
Big White Mtn.	154-Can	5500	2/1	50	13.1	7.2	14.1*
Boulder Road	18A02	1450	12/27	9.2	2.4	0.9	2.7
			1/25	17	4.8	1.5	4.6
Butte Creek	18A03	4070	12/27	22	5.4	1.5	4.7
			1/25	33	8.6	2.4	7.4
Cabin Creek	18A08	3170	12/27	16	4.2	1.3	4.4
			1/25	27	6.8	1.7	6.5
Carmi	126-Can	4100	2/1	28	6.6	2.2	5.3*
Farron # 1	17-Can	4000	1/30	41	10.8	2.5	9.6*
Farron # 2	243-Can	4000	1/30	44	12.3	2.5	8.2*
Goat Creek	18A04	3595	12/27	17	4.4	1.3	4.1
			1/25	27	7.3	2.0	6.2
Monashee Pass	48A-Can	4500	1/9	38	10.1	4.2	6.8*
			1/30	38	11.4	6.8	9.6*
Snow Caps Creek	18A05	2150	12/27	9	2.4	1.0	3.0
			1/25	20	5.3	1.5	4.8
Snow Caps Trail	18A06	2720	12/27	12	3.1	1.1	3.5
			1/25	24	5.9	1.5	5.5
Summit G.S.	18A07	4600	12/27	19	4.5	1.1	3.8
			1/25	28	5.7	1.6	5.9
Trapping Creek Lower	166-Can	3050	2/1	25	5.0	2.2	4.4*
Trapping Creek Upper	165-Can	4450	2/1	34	6.2	4.4	7.4*

Average based on 1958-72 average

* Average for years of record

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

COLVILLE RIVER

Baird	17A06	3215	1/29	29	8.6	2.4	6.1
Carlson	18A09	2885	1/28	18	4.1	0.6	4.5
Chewelah	17A04	4925	1/28	45	13.2	2.0	13.0
Stranger Mountain	17A05	5990	1/28	37	10.3	0.8	11.0
Togo	18A10	3370	1/28	31	8.4	0.5	10.1

SPOKANE RIVER

Above Burke	15B08	4100	12/28	40	10.5	5.3	-
			1/30	54	16.1	7.0	-
4th of July Summit	16B03	3100	12/28	14	2.9	0.0	4.1
			1/31	29	7.1	2.3	6.8
Lookout	15B02	5250	12/28	62	22.0	4.8	15.6
			1/30	84	27.5	7.0	26.4
Sherwin	16C01	3200	12/30	28	5.8	1.9	-
			1/27	28	7.6	3.6	11.0
Mosquito Ridge	16A04	5110	2/6	93	30.6	-	-

OKANOGAN RIVER

Aberdeen Lake	6A-Can	4300	1/31	29	7.6	2.7	5.0*
Blackwall Peak	100-Can	6250	1/7	73	23.5	4.6	13.7*
			2/1	Late Report		7.3	24.6*
Brenda Mine	193-Can	4800	12/29	37	10.0	2.4	6.2*
			1/30	43	11.9	3.3	9.7*
Brookmere	27-Can	3200	12/31	23	5.1	1.3	1.3*
			1/30	33	7.9	2.3	7.1*
Carrs Landing Upper	168-Can	3200	12/29	21	3.8	0.5	2.1*
			1/30	24	5.6	1.6	3.8*
Clark +	19A08a	7000	2/1	Not Measured		-	-
Dollar Watch +	20A29a	7000	2/1	Not Measured		6.0	19.4
Enderby	130-Can	6250	12/30	79	24.2	11.5	11.5*
			1/27	90	29.6	14.6	25.3*
Freezeout Meadows New	20A38	5000	1/27	62	20.9	7.4	New
Hamilton Hill	107-Can	4900	1/30	46	15.4	4.1	10.3*
Harts Pass	20A05A	6500	1/28	96	37.1	9.7	32.7
Horseshoe Basin +	19A05a	7000				-	9.7
Isontok Lake	152-Can	6300	12/30	27	6.9	1.4	4.0*
			1/28	32	8.5	1.7	6.2*
Lost Horse Mtn.	105-Can	6300	2/1	Late Report		3.3	6.9*
Loup Loup	19A07	4650	1/30	31	8.5	0.4	7.6
McCulloch	4-Can	4200	12/30	24	5.0	1.1	3.2*
			1/28	28	6.5	2.5	4.9*
Missezula Mtn.	106-Can	5100	1/29	37	10.2	2.4	6.8*
Mission Creek	5A-Can	6000	12/28	39	11.9	5.3	9.2*
			1/31	48	15.3	7.7	13.8*

+ Snow water equivalent estimated from aerial stadia observation

Average based on 1958-72 average

* Average for years of record

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

OKANOGAN RIVER (Cont.)

Monashee Pass	48A-Can	4500	1/9	38	10.1	4.2	6.8*
			1/30	38	11.4	6.8	9.6*
Mount Kobau	156-Can	5950	12/29	24	5.9	1.1	1.1*
			1/30	30	7.7	1.7	9.9*
Muckamuck +	19A09a	6390	2/4	52	15.1	0.0	-
Mutton Creek No. 1	19A01	5700	1/26	41	11.1	0.0	10.4
Mutton Creek No. 2	19A04	6000	1/26	34	10.5	0.5	10.9
Mutton Creek No. 2 SP	19A11SP	6000	1/26	-	10.1	-	New
New Copper Mtn.	46A-Can	4300	1/28	23	4.7	1.1	5.4*
New Pentiction Res.#2	183-Can	5225	1/31	30	6.4	3.2	7.3*
Oyama Lake	203-Can	4400	1/30	28	7.4	2.6	5.5*
Paysayten +	20A28a	4300	2/3	32	12.5	3.6	13.0
Postill Lake	55-Can	4500	1/31	28	6.9	3.6	5.9*
Rusty Creek	19A03	4000	1/27	28	6.6	0.2	5.9
Salmon Meadows	19A02	4500	1/27	32	7.3	0.4	7.8
Silver Star Mountain	99-Can	6050	12/31	63	20.4	6.4	14.3*
			1/29	71	24.8	9.0	19.3*
Starvation Mountain +	19A10a	6750	2/1	Not Measured		0.0	-
Summerland Reservoir	3A-Can	4200	12/31	28	7.0	1.9	4.9*
			1/29	37	9.4	2.5	7.6*
Touts Coulee	19A06	2845	1/30	16	3.1	0.5	3.4
Trout Creek	3-Can	4700	1/28	28	7.4	2.4	5.2*
Vaseux Creek	233-Can	4600	12/31	18	3.0	1.4	2.5*
			1/30	24	5.0	2.2	5.1*
White Rocks Mtn.	70-Can	6000	1/5	54	17.6	-	-
			1/31	62	21.8	5.3	18.7*

METHOW RIVER

Billy Goat Pass +	21A10a	6409	2/1	Not Measured		6.0	20.8
Dollar Watch +	20A29a	7000	2/1	Not Measured		6.0	19.4
Harts Pass	20A05A	6500	1/28	96	37.1	9.7	32.7
Horseshoe Basin +	19A05A	7000	2/1	Not Measured		-	9.7
Loup Loup	19A07	4650	1/30	31	8.5	0.4	7.6
Mutton Creek No. 1	19A01	5700	1/26	41	11.1	0.0	10.4
Mutton Creek No. 2	19A04	6000	1/26	34	10.5	0.5	10.9
Rusty Creek	19A03	4000	1/27	28	6.6	0.2	5.9
Salmon Meadows	19A02	4500	1/27	32	7.3	0.4	7.8
War Creek Pass +	20A31a	6500	2/1	Not Measured		-	-

+ Snow water equivalent estimated from aerial stadia observation

Average based on 1958-72 average

* Average for years of record

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

CHELAN LAKE BASIN

Cloudy Pass +	20A22a	6500	2/3	92	35.9	5.6	29.0
Little Meadows +	20A24a	5275	2/3	115	42.6	6.3	32.2
Lyman Lake +	20A23A	5900	2/3	144	53.3	14.8	42.1
Park Creek Flat +	20A13a	2220	2/1	Not Measured	-	-	27.3
Park Creek Ridge	20A12A	4600	2/3	128	44.8	7.0	34.1
Petersons +	20A16a	3730	2/1	Not Measured	-	-	25.1
Rainy Pass	20A09	4780	1/28	101	37.6	7.7	29.5
Safety Harbor +	20A30a	6300	2/1	Not Measured	1.8	-	-
War Creek Pass +	20A31a	6500	2/1	Not Measured	-	-	-

ENTIAT RIVER

Blue Creek G.S. +	20B28a	5425	1/26	126	34.0	-	-
Brief	20B19	1600	1/28	26	9.1	1.0	6.8
Entiat Meadows +	20A33a	4540	1/26	118	31.9	-	-
Entiat River Trail +	20A34a	3325	1/26	86	27.5	-	-
Four Mile Ridge +	20B27a	6800	1/26	100	27.0	-	-
Fox Camp +	20A36a	6510	1/26	152	41.0	-	-
Pope Ridge	20B20	3450	1/31	64	20.2	1.0	14.0
Pugh Ridge +	20A32a	6725	1/26	97	26.2	-	-
Shady Pass	20A37	6200	1/30	111	30.0	2.7	-
Snow Brushy +	20A35a	3910	1/26	113	36.2	-	-
Tommy Creek +	20B21a	4900	1/26	76	20.5	-	-

WENATCHEE RIVER

Berne-Mill Creek	21B23	3170	12/1	29	8.9	-	4.1
			12/14	48	16.8	-	7.6
			12/28	48	17.2	1.8	11.2
			1/11	74	24.4	2.2	16.8
			1/31	69	27.2	2.2	21.4
Berne-Mill Creek New	21B41SP	3240	12/1	26	8.6	-	-
			12/28	34	12.4	1.6	9.9
			1/31	58	20.8	0.0	18.7
Blewett Pass No. 2	20B02	4270	12/28	26	8.5	0.0	6.7
			1/27	45	14.3	0.0	13.0
Chiwaukum G.S.	20B16	1810	12/2	12	3.4	-	1.5
			12/14	24	6.4	-	3.2
			12/28	23	7.1	1.0	5.1
			1/11	32	8.9	1.1	7.8
			1/30	31	9.6	2.0	9.9
Lake Wenatchee	20B05	1970	12/1	24	7.2	-	1.5
			12/15	35	11.9	-	3.9
			12/28	32	12.4	1.9	6.1
			1/11	49	15.5	2.4	9.6
			1/30	44	15.4	2.4	12.1

+ Snow water equivalent estimated from aerial stadia observation

Average based on 1958-72 average

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

WENATCHEE RIVER (Cont.)

Leavenworth R.S.	20B17	1127	10/26	0	0.0	-	0.0
			11/10	0	0.0	-	0.0
			11/25	1.9	0.5	-	0.8
			12/12	8.6	2.0	-	1.8
			12/27	6.0	2.2	0.5	3.4
			1/13	14	4.9	1.1	4.7
			1/27	13	5.8	0.8	6.0
Lyman Lake + Merriitt	20A23A 20B18	5900 2140	2/3	144	53.3	14.8	42.1
			12/2	17	5.8	-	2.3
			12/14	39	12.0	-	4.9
			12/28	37	12.8	1.8	7.9
			1/11	54	16.6	2.0	11.7
			1/30	45	17.0	2.2	14.5
			11/17	52	10.5	-	3.6
Stevens Pass	21B01	4070	12/2	44	15.9	1.0	8.9
			12/13	78	29.0	2.3	14.7
			12/28	75	29.2	5.7	21.7
			1/11	103	37.7	6.9	29.0
			1/30	102	39.5	6.3	37.0
			12/2	31	11.0	-	-
			12/14	59	19.5	-	-
Stevens Pass Sand Shed	21B45	3700	12/28	58	21.9	2.9	-
			1/11	80	28.8	3.3	-
			1/30	76	28.9	2.3	-

COLOCKUM CREEK

Colockum Creek Upper	20B22	5300	1/30	41	12.1	0.0	-
Colockum Creek Lower	20B23	4300	1/30	36	9.8	0.0	-
Trough # 2	20B25SP	5310	1/30	46	13.5	0.0	-

SQUILCHUCK CREEK

Beehive Springs	20B03	4400	1/27	34	9.6	0.0	6.6
Scout-A-Vista	20B04	3400	1/27	34	9.7	0.0	6.5

STEMILT CREEK

Jump-Off	20B08	4450	1/30	37	10.2	0.0	6.7
Stemilt Slide	20B06	5000	1/27	50	14.3	0.0	12.4
Upper Wheeler	20B07	4400	1/27	35	10.6	0.0	8.3

+ Snow water equivalent estimated from aerial stadia observation

Average based on 1958-72 average

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
<u>YAKIMA RIVER</u>							
Ahtanum R.S.	21C11	3100	12/28	7.4	1.9	0.0	3.1
			1/25	31	8.6	0.0	6.3
Blewett Pass No. 2	20B02	4270	12/28	26	8.5	0.0	6.7
			1/27	45	14.3	0.0	13.0
Bumping Lake Old	21C08	3450	1/7	36	7.2	0.0	7.1
			1/14	39	8.1	-	10.4
			1/26	37	10.1	0.0	13.2
Bumping Lake New	21C36	3400	12/14	15	5.1	-	5.8
			1/7	43	9.8	0.0	8.7
			1/14	45	11.9	-	13.0
			1/26	44	12.8	0.0	18.3
Cayuse Pass	21C06	5300	12/31	99	39.1	4.3	33.2
			1/27	130	52.7	7.9	58.7
Colockum Pass	20B09	5370	1/27	53	18.4	0.0	11.2
Cooke Creek	20B10	4123	1/27	Trace	0.0	0.0	7.2
Corral Pass	21B13	6000	1/27	73	26.8	4.2	-
Green Lake	21C10	6000	1/24	80	27.7	2.3	-
Grouse Camp	20B11	5385	1/26	50	16.7	0.0	12.1
High Creek	20B12	2930	1/26	16	5.1	0.0	4.9
Joe Lake +	21B46a	4624	1/23	123	49.2	13.4	-
Lake Cle Elum	21B14M	2200	12/9	18	4.0	0.0	1.1
			12/16	13	3.9	-	2.2
			1/4	24	5.4	0.4	4.2
			1/12	21	5.6	0.8	6.5
			1/27	19	6.2	0.0	8.2
Lemah Creek +	21B47a	3327	1/23	87	34.8	6.1	-
Manashtash	20C01	3935	1/30	25	6.9	0.0	3.9
Morse Lake	21C17	5400	1/30	108	39.9	3.0	39.4
Nanum	20B13	3875	1/26	23	6.8	0.0	7.8
Olallie Meadows	21B02	3625	1/27	60	23.2	0.8	32.7
Satus Pass	20D01	4030	1/30	25	6.9	0.0	8.7
Stampede Pass SP	21B10	3860	12/2	30	13.0	-	6.3
			12/15	59	22.5	-	11.9
			1/3	65	27.6	3.6	16.5
			1/16	75	33.5	4.2	22.0
			1/30	80	34.0	2.0	28.7
Trail Creek	20B14	3360	1/27	13	4.1	0.0	2.3
Tunnel Avenue	21B08	2450	11/21	12	3.0	-	0.0
			12/5	17	3.4	0.0	2.7
			12/14	24	7.4	-	6.4
			1/3	35	9.5	1.0	9.2
			1/13	42	11.7	2.6	11.3
			1/26	40	12.3	1.2	17.6
Van Epps Pass +	20B26a	5925	1/23	110	44.0	10.3	-

+ Snow water equivalent estimated from aerial stadia observation

Average based on 1958-72 average

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

YAKIMA RIVER (Cont.)

Walters Flat	20B15	3360	1/26	20	6.0	0.0	6.3
Waptus Lake +	21B49a	3024	1/23	81	32.4	6.9	-
White Pass (E.Side)	21C28	4500	1/3	34	10.1	-	9.6
			1/16	48	12.0	-	14.0
			1/30	49	14.2	0.0	18.2

AHTANUM CREEK

Ahtanum R.S.	21C11	3100	12/28	7.4	1.9	0.0	3.1
			1/25	31	8.6	0.0	6.3
Green Lake	21C10	6000	1/24	80	27.7	2.3	-

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C04	5700	1/27	46	12.7	2.4	19.3
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MILL CREEK

Homestead	17C01	4030	1/25	11	3.8	0.6	6.5
Martin Springs	17C02	4400	1/25	16	4.6	1.6	9.8
Tollgate	18D03M	5070	2/2	44	13.7	4.0	16.7

KLICKITAT RIVER

Satus Pass	20D01	4030	1/30	25	6.9	0.0	8.7
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WHITE SALMON RIVER

Cultus Creek	21C12	4000	12/27	43	15.1	2.7	17.8
			1/27	69	25.0	3.4	32.5
Surprise Lakes	21C13A	4250	12/27	39	14.2	3.0	20.1
			1/27	72	25.2	4.2	35.9

WIND RIVER

Old Man Pass	21D19	3100	12/27	6	0.6	0.0	7.5
			1/27	13	3.9	0.0	14.7

Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average [#]

LEWIS RIVER

Blue Lake +	21C22a	4800	12/27	94	32.0	8.0	34.5
			1/27	136	49.0	7.7	60.5
Bob's Trail	21C21	2200	12/28	5	1.6	0.0	6.5
			1/26	5.2	1.3	0.0	12.0
Calamity Ridge +	22D01a	2500	12/27	2	0.2	0.0	3.9
			1/26	2	0.6	0.0	5.6
Council Pass +	21C18	4200	12/27	36	12.6	4.3	18.6
			1/27	58	20.3	2.8	29.7
Cultus Creek	21C12	4000	12/27	43	15.1	2.7	17.8
			1/27	69	25.0	3.4	32.5
Divide Meadow +	21C29a	5600	12/27	68	23.1	4.8	27.5
			1/27	86	30.1	5.0	42.3
Grand Meadow	21C25	3500	12/27	10	2.2	0.0	10.5
			1/27	26	8.6	0.0	19.4
Lone Pine Shelter	21C26	3800	12/27	28	8.7	1.3	17.0
			1/27	44	14.6	1.3	30.5
Marble Mountain +	22C05a	3200	12/27	10	2.7	0.0	12.7
			1/26	14	5.3	0.0	28.7
New Muddy River	22C06	2000	12/28	0	0.0	0.0	6.4
			1/26	0	0.0	0.0	12.1
Old Man Pass	21D19	3100	12/27	6	0.6	0.0	7.5
			1/27	13	3.9	0.0	14.7
Plains of Abraham +	22C01a	4400	12/27	62	21.7	2.7	28.8
			1/26	110	39.6	2.9	45.2
Smith Creek Road	22C04	2100	12/27	0	0.0	0.0	9.5
			1/26	9.6	3.8	0.0	15.7
Spencer Meadow +	21C20a	3400	12/27	9	2.2	0.3	10.2
			1/26	10	3.4	0.0	17.9
Surprise Lakes	21C13A	4250	12/27	39	14.2	3.0	20.1
			1/27	72	25.2	4.2	35.9
Table Mountain +	21C24a	4200	12/28	56	19.0	4.3	21.4
			1/27	82	28.7	2.1	34.8
Timbered Peak +	21D18a	3000	12/27	4	0.4	0.0	8.0
			1/26	6	1.8	0.0	14.3

COWLITZ RIVER

Cayuse Pass	21C06	5300	12/31	99	39.1	4.3	41.3
			1/27	130	52.7	7.9	58.7
Plains of Abraham +	22C01a	4400	12/27	62	21.7	2.7	28.8
			1/26	110	39.6	2.9	45.2
White Pass (E. Side)	21C28	4500	1/3	35	10.1	-	9.6
			1/16	48	12.0	-	14.0
			1/30	49	14.2	0.0	18.2

Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

PUGET SOUND DRAINAGEWHITE RIVER

Cayuse Pass	21C06	5300	12/31	99	39.1	4.3	41.3
			1/27	130	52.7	7.9	58.7
Corral Pass	21B13	6000	1/27	73	26.8	4.2	-
Morse Lake	21C17	5400	1/30	108	39.9	3.0	39.4

GREEN RIVER

Airstrip	21B24	1800	11/30	0	0.0	-	0.6
			12/31	3.4	0.4	0.0	2.5
			1/27	0	0.0	0.0	4.9
Charley Creek	21B25	1200	11/30	0	0.0	-	0.0
			12/31	Trace	0.0	0.0	1.6
			1/27	0	0.0	0.0	1.5
Cougar Mountain	21B42SP	3200	1/27	6.2	2.0	0.0	-
Grass Mtn. No. 2	21B27	2900	11/30	0	0.0	-	2.9
			12/31	8	0.9	0.0	7.6
			1/27	9.7	3.3	0.0	15.3
Grass Mtn. No. 3	21B28	2100	11/30	0	0.0	-	0.7
			12/31	4.8	1.1	0.0	2.6
			1/27	0	0.0	0.0	5.3
Lester Creek	21B29	3100	11/30	7.6	2.0	-	-
			12/31	18	2.5	1.1	9.7
			1/27	24	6.8	2.0	17.8
Lynn Lake	21B50	4000	11/30	0	0.0	-	-
			12/31	4.2	1.2	0.9	-
			1/27	7.8	2.3	0.0	-
Sawmill Ridge	21B31	4700	11/30	26	9.0	-	7.0
			12/31	45	17.3	2.2	15.2
			1/27	59	21.2	3.7	28.6
Snowshoe Butte	21B43SP	5000	1/27	89	32.4	3.5	-
Stampede Pass SP	21B10	3860	12/2	30	13.0	-	6.3
			12/15	59	22.5	-	11.9
			1/3	65	27.6	3.6	16.5
			1/16	75	33.5	4.2	22.0
			1/30	80	34.0	2.0	28.7
Twin Camp	21B30	4100	11/30	12	4.8	-	4.1
			12/31	23	7.5	1.8	11.3
			1/27	34	10.9	1.7	17.6

Average based on 1958-72 average

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 10

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

SNOQUALMIE RIVER

Olallie Meadows	21B02	3625	1/27	60	23.2	0.8	32.7
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SKYKOMISH RIVER

Stevens Pass	21B01	4070	11/17	52	10.5	-	3.6
			12/2	44	15.9	-	8.9
			12/13	78	29.0	2.3	14.7
			12/28	75	29.2	5.7	21.7
			1/11	103	37.7	6.9	29.0
			1/30	102	39.5	6.3	37.0
Stevens Pass Sand Shed	21B45	4070	12/2	31	11.0	-	-
			12/14	59	19.5	-	-
			12/28	58	21.9	2.9	-
			1/11	80	28.8	3.3	-
			1/30	76	28.9	2.3	-

SKAGIT RIVER

Beaver Creek Trail	21A04	2200	1/27	37	12.8	0.5	-
Beaver Pass	21A01	3680	1/27	57	19.0	1.4	-
Brown Top Ridge +	21A28a	6000	1/27	113	43.6	13.6	-
Cloudy Pass +	20A22a	6500	2/3	92	35.9	5.6	29.0
Devils Park	20A04	5900	1/28	95	35.6	8.7	31.9
Freezeout Creek Trail	20A01	3500	1/27	34	9.6	0.9	-
Freezeout Meadows New	20A38	5000	1/27	62	20.9	7.4	-
Granite Creek	21A29A	3500	1/28	47	13.5	3.1	-
Harts Pass	20A05A	6500	1/28	96	37.1	9.7	32.7
Klesilkwa	35B-Can	3700	2/1	Late Report		0.4	9.9*
Lyman Lake	20A23A	5900	2/3	144	53.3	14.8	42.1
Meadow Cabins	20A08	1900	1/27	21	7.2	0.0	-
New Hozomeen Lake	21A30	2800	1/27	26	8.2	0.8	-
New Tashme	26A-Can	2500	2/1	Late Report		2.0	8.5*
Rainy Pass	20A09	4780	1/28	101	37.6	7.7	29.5
Thunder Basin	20A07	4200	1/27	50	16.0	3.0	-

BAKER RIVER

Baker Pass +	21A27a	4900	11/3	24	6.0	-	-
			12/16	Marker Missing		-	-
Dock Butte +	21A11A	3800	11/3	15	4.0	1.0	-
			12/16	68	20.0	-	-
			12/27	72	22.0	4.0	-
			2/1	Not Measured		4.0	44.8
Easy Pass +	21A07A	5200	11/3	36	9.0	2.0	-
			12/16	120	36.0	-	-
			12/27	120	36.0	10.0	-
			1/27	132	53.0	11.0	53.9

Average based on 1958-72 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 11

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

BAKER RIVER (Cont.)

Jasper Pass +	21A06A	5400	11/3	32	8.0	2.0	-
			12/16	132	40.0	-	-
			12/27	126	38.0	19.0	-
			1/27	156	72.0	14.0	65.7
Marten Lake	21A09A	3600	11/3	16	4.0	1.0	-
			12/16	96	27.0	-	-
			12/27	92	28.0	11.0	-
			2/1	Not Measured		14.0	52.2
Mt. Blum +	21A18a	5800	11/3	10	3.0	2.0	-
			12/16	78	30.0	-	-
			12/27	78	23.0	11.0	-
			1/27	106	42.0	11.0	42.5
Panorama New	21A26	4300	1/13	94	38.9	9.6	-
			1/28	104	48.0	7.5	-
Rocky Creek	21A12A	2100	11/3	12	3.0	0.0	-
			12/16	32	9.0	-	-
			12/27	27	8.0	0.0	-
			2/1	Not Measured		0.0	21.5
Schreibers Meadow	21A10A	3400	11/3	10	3.0	0.0	-
			12/16	56	17.0	-	-
			12/27	58	17.0	4.0	-
			2/1	Not Measured		2.0	39.9
S. F. Thunder Creek +	21A14A	2200	11/3	0	0.0	0.0	-
			12/16	16	5.0	-	-
			12/27	16	5.0	0.0	-
			1/27	0	0.0	0.0	7.4
Watson Lakes	21A08A	4500	11/3	24	6.0	1.0	-
			12/16	70	21.0	-	-
			12/27	73	22.0	10.0	-
			1/27	88	37.0	9.0	42.9

NOOKSACK RIVER

Glacier Creek	21A23	3700	11/27	15	6.9	0.0	-
			12/30	23	7.4	0.9	-
			2/1	Not Measured		0.0	-
Panorama New	21A26	4300	1/13	94	38.9	9.6	-
			1/28	104	48.0	7.5	-

Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO FEBRUARY 1, 1978 - APPENDIX 12

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

O L Y M P I C P E N I N S U L ADUNGENESS RIVER

Deer Park	23B04	5200	1/30	34	10.1	0.0	-
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MORSE CREEK

Cox Valley	23B14	4500	1/28	60	22.6	0.0	-
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ELWHA RIVER

Hurricane	23B03	4500	1/27	30	9.1	0.0	16.7
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Average based on 1958-72 average

PRECIPITATION STORAGE GAGES

Amount of precipitation in inches that has accumulated since the previous measurement.

<u>BAW FAW PEAK</u>		<u>CEDAR FALLS 4SE</u>		<u>CEDAR FALLS 7SSE</u>	
Not reported		8/2/76	Recharge	8/2/76	Recharge
		9/7/76	8.31	9/7/76	5.11
<u>BIG BOULDER CREEK</u>		10/6/76	1.49	10/6/76	2.13
		11/8/76	5.96	11/8/76	4.90
8/11/76	Recharge	12/3/76	5.97	12/3/76	5.75
6/6/77	43.12	1/24/77	17.46	1/24/77	16.62
10/12/77	7.88	5/9/77	27.27	5/4/77	27.48
11/8/77	6.25	6/1/77	5.32	6/1/77	5.97
		7/6/77	3.41	7/5/77	2.98
<u>BUMPING RIDGE</u>		7/26/77	1.28	8/2/77	1.49
		9/6/77	7.02	9/6/77	6.60
7/20/76	Recharge	10/4/77	5.97	10/4/77	5.54
6/9/77	43.12				
		<u>CEDAR FALLS 5SE</u>		<u>CEDAR FALLS 8SE</u>	
<u>CANTON CREEK</u>		7/28/76	Recharge	7/28/76	Recharge
9/30/76	Recharge	9/2/76	2.77	9/2/76	3.83
11/10/76	6.70	10/5/76	3.19	10/6/76	3.62
12/10/76	7.00	11/9/76	4.69	11/5/76	3.84
1/17/77	6.70	12/3/76	3.40	12/31/76	3.41
3/10/77	10.40	2/4/77	11.07	1/24/77	11.71
4/8/77	7.20	5/5/77	14.70	5/6/77	18.75
4/13/77	0.70	5/31/77	4.68	6/1/77	4.26
4/28/77	1.60	7/6/77	1.50	7/5/77	1.27
5/12/77	2.70	7/29/77	0.86	7/29/77	0.86
6/1/77	3.20	9/2/77	4.47	9/6/77	5.96
6/21/77	1.10	10/3/77	5.75	10/3/77	4.69
7/18/77	0.90				
8/25/77	0.20	<u>CEDAR FALLS 7SE</u>		<u>CEDAR FALLS 10SE</u>	
8/31/77	5.60	8/2/76	Recharge	8/2/76	Recharge
9/19/77	2.25	9/2/76	5.96	9/2/76	5.32
9/26/77	3.20	10/4/76	1.07	10/4/76	3.40
<u>CARNATION 15E</u>		11/5/76	5.32	11/5/76	7.24
		12/1/76	4.48	12/3/76	7.25
7/26/76	Recharge	1/24/77	13.84	1/24/77	16.61
9/7/76	7.45	5/9/77	23.86	5/9/77	30.25
10/11/76	1.70	6/1/77	5.54	6/1/77	6.17
11/13/76	5.33	7/5/77	1.27	7/5/77	2.13
12/1/76	6.18	8/1/77	1.50	8/1/77	1.92
2/5/77	20.45	9/6/77	4.47	9/6/77	7.03
5/10/77	29.18	10/3/77	5.54	10/3/77	6.39
6/8/77	7.02				
7/2/77	1.50				
8/5/77	2.34				
9/7/77	7.67				
10/8/77	7.24				

NOTE: Previously published by NOAA in "Storage-Gage Precipitation Data for Western United States"

PRECIPITATION STORAGE GAGES (Continued)

CONCRETE 12NE

10/9/76 Recharge
3/28/77 53.67
4/26/77 5.53
9/1/77 20.38

CONCRETE 12NNW

10/8/76 Recharge
2/24/77 51.61
3/28/77 19.96
4/26/77 8.43
6/9/77 8.90
9/2/77 7.40

CONSULTANT CREEK

7/26/76 Recharge
9/7/76 9.44
10/11/76 2.93
11/13/76 5.17
12/1/76 7.43
2/5/77 21.38
5/10/77 31.73
6/2/77 9.22
7/2/77 1.12
8/5/77 10.35
9/7/77 6.98
10/8/77 5.85

COUGAR 16NE

9/30/77 Recharge
12/28/76 11.32
3/29/77 23.40
9/27/77 22.56

DRY CREEK

7/30/76 Recharge
9/7/76 9.00
10/11/76 2.47
11/13/76 4.72
12/1/76 9.22
2/15/77 20.92
5/10/77 32.18
6/2/77 8.10
7/2/77 2.02
8/2/77 4.28
9/10/77 10.80
10/8/77 4.96

EASY PASS

10/8/76 Recharge
2/24/77 23.74
3/29/77 7.91
4/26/77 4.17
6/9/77 8.46
9/1/77 11.65

FROZEN MOUNTAIN

7/29/76 Recharge
9/7/76 8.77
10/11/76 2.70
11/13/76 4.28
12/1/76 8.78
2/5/77 21.82
5/10/77 34.20
6/2/77 7.66
7/2/77 2.02
8/8/77 4.72
9/10/77 8.78
10/8/77 4.96

GLACIER CREEK

9/27/76 Recharge
5/18/77 63.55
10/7/77 18.05

GRASS MTN. # 1

9/30/76 Recharge
11/10/76 7.40
12/9/76 9.45
2/3/77 12.60
3/10/77 10.60
4/28/77 13.50
5/9/77 2.50
6/24/77 6.50
9/6/77 9.90
9/26/77 4.30

GREEN RIVER II

10/4/76 Recharge
11/3/76 2.90
11/23/76 2.00
12/6/76 0.70
1/7/77 6.30
2/10/77 1.80
3/2/77 2.90

GREEN RIVER II (Continued)

4/8/77 7.60
4/15/77 0.40
5/18/77 2.70
6/1/77 2.00
6/21/77 0.90
7/6/77 0.00
7/26/77 0.60
9/1/77 3.90
9/12/77 0.90
9/26/77 2.50

JASPER PASS

10/9/76 Recharge
2/24/77 30.35
3/29/77 14.21
4/26/77 5.63
6/9/77 10.91
9/1/77 7.99

LESTER 5NNE

7/27/76 Recharge
9/2/76 5.54
10/4/76 2.34
11/5/76 5.96
12/1/76 5.54
1/28/77 15.34
5/6/77 25.56
6/1/77 5.96
7/6/77 2.13
7/27/77 1.28
9/2/77 4.90
10/4/77 6.60

LESTER 7NNW

7/27/76 Recharge
9/2/76 4.90
10/5/76 1.71
11/5/76 5.11
12/3/76 5.32
5/6/77 37.49
6/1/77 4.26
7/6/77 1.70
8/2/77 1.07
9/2/77 4.26
10/4/77 6.39

PRECIPITATION STORAGE GAGES (Continued)

LESTER 8N

7/27/76 Recharge
 9/7/76 6.17
 10/5/76 -1.49
 11/5/76 7.88
 12/3/76 4.90
 5/5/77 40.05
 5/31/77 4.47
 7/6/77 2.98
 8/1/77 -0.22
 9/2/77 5.75
 10/4/77 6.60

LESTER 8NNW

7/27/76 Recharge
 9/2/76 4.47
 10/5/76 0.21
 11/5/76 4.48
 12/3/76 5.33
 5/5/77 35.78
 6/1/77 3.84
 7/6/77 1.92
 8/2/77 1.07
 9/2/77 4.05
 10/4/77 6.18

LESTER 10NNW

7/28/76 Recharge
 9/2/76 4.90
 10/5/76 2.77
 11/5/76 5.54
 12/3/77 4.69
 1/24/77 14.48
 5/5/77 25.98
 5/31/77 4.69
 7/5/77 2.34
 7/27/77 1.28
 9/6/77 6.82
 10/4/77 4.90

LESTER 11NW

7/28/76 Recharge
 9/2/76 4.26
 10/5/76 2.98
 11/5/76 4.68
 12/3/76 4.05
 2/4/77 11.93
 5/6/77 22.58
 5/31/77 4.68
 7/6/77 0.68
 7/29/77 0.22
 9/6/77 6.60
 10/3/77 4.04

LONE PINE SHELTER

9/30/76 Recharge
 12/27/76 3.19
 2/23/77 7.38
 3/29/77 17.95
 4/25/77 2.26
 6/8/77 12.33
 9/27/77 9.81

MARTIN LAKE

10/9/76 Recharge
 2/24/77 58.66
 3/29/77 27.32
 4/26/77 6.85
 6/9/77 15.83
 9/1/77 13.46

MIDDLE FORK NOOKSACK

10/14/76 Recharge
 5/17/77 56.90
 10/6/77 16.80

MIDDLE FORK TAYLOR

8/3/76 Recharge
 9/7/76 9.16
 10/5/76 1.49
 11/8/76 5.33
 12/2/76 4.26
 1/24/77 13.63
 5/5/77 20.02
 6/1/77 7.88
 7/3/77 1.92
 7/26/77 2.56
 9/7/77 7.87
 10/3/77 5.53

MONTE CRISTO

9/16/76 Recharge
 11/7/77 118.10

MT. INDEX

7/29/76 Recharge
 9/7/76 8.55
 10/11/76 6.52
 11/13/76 2.47
 12/1/76 9.45
 2/5/77 21.38
 5/10/77 33.07
 6/2/77 8.78
 7/2/77 2.26
 8/8/77 6.07

MT. INDEX (Continued)

9/10/77 11.25
 10/8/77 4.28

NORTH FORK TAYLOR

8/3/76 Recharge
 9/13/76 8.31
 10/6/76 1.70
 11/8/76 4.05
 12/2/76 3.83
 1/24/77 11.08
 5/5/77 15.55
 6/1/77 7.45
 7/3/77 2.77
 7/26/77 1.06
 9/7/77 7.25
 10/3/77 5.32

OLDMAN PASS

9/29/76 Recharge
 12/27/76 9.31
 2/23/77 5.12
 6/8/77 21.47
 9/28/77 8.30

PARK CREEK RIDGE

8/29/76 Recharge
 6/10/77 39.88
 10/4/77 4.62

PORT ANGELES 11S

8/23/76 Recharge
 9/15/77 27.00

RUSTY CREEK

10/29/76 Recharge
 11/29/76 0.00
 12/28/76 0.60
 1/27/77 0.20
 2/24/77 0.50
 3/29/77 4.30
 4/27/77 0.70
 5/26/77 4.30
 6/28/77 3.20
 7/27/77 0.60
 8/29/77 1.90
 9/26/77 4.30
 10/26/77 0.80
 11/29/77 8.30
 12/30/77 7.35
 1/27/78 3.65

PRECIPITATION STORAGE GAGES (Continued)

SALMON MEADOWS

10/29/76	Recharge
11/29/76	0.35
12/28/76	1.00
1/27/77	0.30
2/24/77	0.50
3/29/77	6.10
4/27/77	0.60
5/26/77	6.20
6/28/77	2.70
7/27/77	1.20
8/29/77	2.40
9/26/77	3.40
10/26/77	1.10
11/29/77	7.25
12/30/77	6.55
1/27/78	3.70

SHERMAN CREEK PASS

9/2/76	Recharge
9/30/77	16.22

SPRUCE SPRINGS

10/6/75	Recharge
10/1/76	49.95
10/1/77	26.30

SKYKOMISH 7½W

7/30/76	Recharge
9/14/76	10.65
10/10/76	1.70
11/14/76	7.46
12/1/76	12.78
6/2/77	74.97
7/6/77	4.26
8/3/77	2.77
9/10/77	10.86
10/5/77	5.33

SPIRIT LAKE 3S

8/31/76	Recharge
11/30/76	10.35
12/30/76	4.05
2/15/77	4.05
4/04/77	16.42
4/31/77	3.15
7/20/77	13.73
9/30/77	13.57

SURPRISE LAKES

7/29/76	Recharge
12/27/76	32.0
6/3/77	33.0

SWAUK PASS

Not Reported

TAYLOR CREEK

8/3/76	Recharge
9/13/76	6.82
10/6/76	1.49
11/8/76	3.41
12/2/76	2.77
1/24/77	10.65
5/5/77	13.63
6/1/77	5.96
7/3/77	1.71
8/2/77	2.13
9/7/77	5.96
10/3/77	4.26

TROUGH # 2

7/15/76	Recharge
9/15/76	2.40
6/6/77	19.10
11/8/77	4.50

TROUT LAKE 13NNW

9/29/76	Recharge
12/27/76	1.84
2/23/77	5.20
3/29/77	12.75
9/28/77	19.04

TROUT LAKE 19WNW

9/29/76	Recharge
12/28/76	1.26
3/29/77	20.38
9/28/77	21.89

TRUCK HILL

7/29/76	Recharge
9/7/76	9.68
10/11/76	2.70
11/13/76	4.72

TRUCK HILL (Continued)

12/1/76	9.00
2/5/77	20.25
5/10/77	30.82
6/2/77	9.00
7/2/77	1.57
Demolished	

UPPER WHEELER

5/28/76	Recharge
6/28/76	0.20
7/28/76	0.05
1/27/77	0.20
2/25/77	0.50
3/30/77	2.00
4/28/77	0.00
5/30/77	1.60
6/29/77	0.39
7/31/77	0.02
8/28/77	0.75
9/27/77	0.90
10/28/77	0.35
11/25/77	3.20
12/27/77	7.80
1/27/78	5.70

YELLOW CREEK

7/26/76	Recharge
9/7/76	8.55
10/11/76	2.02
11/13/76	2.48
12/1/76	5.40
2/5/77	10.80
5/10/77	25.65
6/2/77	7.20
7/2/77	0.68
8/5/77	3.38
9/7/77	4.73
10/8/77	3.60

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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with the Snow Survey"*

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